

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A steel for use in a high strength pinion shaft made by a method comprising:

hot rolling at a temperature of 700°C to 850°C under a draft ratio at an area reduction of 10% or more; and

high frequency hardening the steel, said steel comprising:

0.45wt% - 0.55wt% C;

0.21wt%-0.45wt% Si;

0.50wt% - 1.20wt% Mn;

0.025wt% or less P;

0.025wt% or less S;

0.15wt% - 0.25wt% Mo;

0.0005wt% - 0.005wt% B;

0.005wt% - 0.010wt% Ti; 0.10wt% Ti;

0.015wt% or less N; and

a balance comprising Fe and impurities,

wherein the steel comprises a 3-phase texture of ferrite + pearlite + bainite,

~~wherein 0.80 ≤ Ceq ≤ 0.95, where Ceq = C + 0.07×Si + 0.16×Mn + 0.20×Cr + 0.72×Mo,~~

~~wherein f value ≤ 1.0, where f value = 2.78 - 3.2×C + 0.05×Si - 0.60×Mn - 0.55×Cu -~~

~~0.80×Ni - 0.75×Cr, and~~

wherein the steel is devoid of Cr, Cu, Ni and Al.

2. (Canceled)

3. (Currently Amended) A steel for use in a high strength pinion shaft according to claim 1, further comprising one or more of 0.20wt% or less Nb, 0.20wt% or less Ta, and 0.10wt% or less Zr ~~and 0.10wt% or less Al~~ instead of a portion of said Fe.

4. (Canceled)

5. (Currently Amended) A steel for use in a high strength pinion shaft made by a method comprising:

hot rolling at a temperature of 700°C to 850°C under a draft ratio at an area reduction of 10% or more; and

high frequency hardening the steel, said steel comprising:

0.45wt% - 0.55wt% C;

0.21wt%-0.45wt% Si;

0.50wt% - 1.20wt% Mn;

0.025wt% or less P;

0.025wt% or less S;

0.15wt% - 0.25wt% Mo;

0.0005wt% - 0.005wt% B;

0.005wt% - 0.010wt% Ti; 0.10wt% Ti;

0.015wt% or less N; and

a balance comprising Fe and impurities,
wherein the steel, having been hot rolled, comprises a 3-phase texture of ferrite +
pearlite + bainite,
wherein a ferrite area ratio is 40% or less,
wherein a maximum pearlite block size is 100 μm or less in a circle-equivalent
diameter,
wherein a hardness after hot rolling is 24 to 30 HRC,
wherein a surface hardness after high frequency hardening is 650 HV or higher,
wherein an old austenite crystal grain size in a hardened layer is 8 or more in
view of grain size number,
~~wherein $0.80 \leq \text{Ceq} \leq 0.95$, where $\text{Ceq} = \text{C} + 0.07 \times \text{Si} + 0.16 \times \text{Mn} + 0.20 \times \text{Cr} + 0.72 \times \text{Mo}$,~~
~~wherein f value ≤ 1.0 , where $f = 2.78 - 3.2 \times \text{C} + 0.05 \times \text{Si} - 0.60 \times \text{Mn} - 0.55 \times \text{Cu}$ -~~
 ~~$0.80 \times \text{Ni} - 0.75 \times \text{Cr}$, and~~
wherein the steel is devoid of Cr, Cu, Ni and Al.

6. (Canceled).

7. (Currently Amended) A steel for use in a high strength pinion shaft according to claim 5, further comprising one or more of 0.20wt% or less Nb, 0.20wt% or less Ta, and 0.10wt% or less Zr ~~and 0.10wt% or less Al~~ instead of a portion of said Fe.

8. (Canceled)

9. (Currently Amended) A method of manufacturing a steel for use in a high strength pinion shaft ~~in which a steel~~ comprising:

providing a steel comprising:

0.45wt% - 0.55wt% C;

0.21wt%-0.45wt% Si

0.50wt% - 1.20wt% Mn;

0.025wt% or less P;

0.025wt% or less S;

0.15wt% - 0.25wt% Mo;

0.0005wt% - 0.005wt% B;

0.005wt% - 0.010wt% Ti; 0.10wt% Ti;

0.015wt% or less N; and

a balance comprising Fe and impurities, ~~is fabricated or worked under a draft ratio at an area reduction of 10% or more, and at a temperature of 850°C or lower,~~

~~wherein 0.80 ≤ Ceq ≤ 0.95, where Ceq = C + 0.07×Si + 0.16×Mn + 0.20×Cr + 0.72×Mo,~~

~~wherein f value ≤ 1.0, where T_{tr} = 2.78 - 3.2×C + 0.05×Si - 0.60×Mn - 0.55×Cu - 0.80×Ni - 0.75×Cr,~~

said method comprising hot rolling said steel at a temperature of 700°C to 850°C under a draft ratio at an area reduction of 10% or more to obtain a steel comprising a 3-phase texture of ferrite + pearlite + bainite; and

high frequency hardening the steel, and

wherein the steel is devoid of Cr, Cu, Ni and Al.

10. (Canceled)

11. (Currently Amended) A method of manufacturing a steel for use in a high strength pinion shaft according to claim 9, further comprising one or more of 0.20wt% or less Nb, 0.20wt% or less Ta, and 0.10wt% or less Zr ~~and 0.10wt% or less Al~~ instead of a portion of said Fe.

12. (Canceled)

13. (Previously Presented) A steel for use in a high strength pinion shaft according to claim 1, wherein a ferrite ratio of said steel comprises 40% or less.

14. (Previously Presented) A steel for use in a high strength pinion shaft according to claim 1, wherein a hardness of said steel after hot rolling comprises a range of 24 HRC to 30 HRC.

15. (Previously Presented) A steel for use in a high strength pinion shaft according to claim 1, wherein a surface hardness of said steel comprises 650 HV or more.

16. (Previously Presented) A steel for use in a high strength pinion shaft according to claim 1, wherein said steel comprises an old austenite crystal grain size of 8 or more.

17. (Previously Presented) A method of manufacturing a steel for use in a high strength

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pinion shaft according to claim 9, wherein said steel is fabricated or worked under a temperature in a range of 700 °C to 850 °C.

18. (Previously Presented) A steel for use in a high strength pinion shaft according to claim 1, wherein a torsional strength of said steel comprises 1670 Mpa to 1800 Mpa.

19. (Previously Presented) A steel for use in a high strength pinion shaft according to claim 1, wherein a wear loss of said steel comprises 0.002g to 0.004g.

20. (Canceled)

21. (Canceled)